**ITEC 2150 – Homework #1**

**General Guidelines**

Answer the questions from Quiz 1 and create an example of each in Java. You should create a driver class that calls the implementation in a separate class. You should not rely on static methods in the implementation class.

**Specific methods to be defined/implemented**

1. Create and use each primitive type.
2. Create a constant that can be used as a sentinel.
3. Use an if to control program execution.
4. Use an example of a for, while and do while loop.
5. Create an array in your program
6. Create, add to remove and print an array list.

**Specific Requirements**

Your program should allow the user to select different steps in your program. For example, one of your conditions could be to allow the user to enter a list of names. Another could be to print this list of names. You could add a sort routine, to sort in ascending or descending order. There are no requirements to execute specific functionality. This program is being written to allow me to judge your abilities as a Java programmer. Your program can perform any task that you are interested in working on. Please do not submit an assignment from 2140. I want to see your current coding ability.

**Grading**

Answers to the questions on Quiz 1 will be 30% of your grade. Implementation will be 70% of your grade as listed below:

* Answers to questions – 30%
* Primitives – 5%
* **Constant – 5%**
* If statement – 10%
* **for – 10%**
* **while – 10%**
* do while 10%
* **array – 10%**
* Multi-class – 10%

Quiz Questions

1. What is an algorithm? **A series of steps to find the answer to a specific problem**
2. When a Java program is compiled, what is the output?  How do you compile and execute a Java program from the command line? **The output is computer language that gets executed. From the command line, javac compiles the .java into a .class method to be run.**
3. What is a class? **a class is a runnable template that extends properties and methods of objects.**
4. What is encapsulation?  Why is it used? **Encapsulation is keeping numbers, variables, and methods wrapped up together, with inheritance, in a class**
5. What is a constant?  How is one created? **A constant is a number that remains the same, and must be initialized.**
6. What is a class method?  How is one created? **A method is like a function that has an input and an output that allows us to simplify our code**
7. Name two decision constructs?  Give an example of each. **If statements; age testing. Switch/break statements**
8. What are three looping constructs?  State whether they are pre or post test constructs. **For Loops and While Loops are post test, and do while loops are pre-test**
9. What is an array? **An array is a container that holds a fixed number of variables or objects of s specific type**
10. Create a class to represent a circle.  You should include a method that will allow this class to be executed.  Create a no argument and one argument constructor.  You need to include an instance variable for the radius.  Provide a getter and setter for this variable. **Checkmate!**